ABSTRACT OF THE DISCLOSURE

A method of finding a vertical velocity of a vehicle by first forming two cost functions from three pulse return times. An independently determined approximate vertical velocity and a Fletcher-Powell estimation technique are used on the first cost function, to select a minimum velocity of the first cost function. The selected minimum velocity, two calculated velocities from the selected minimum velocity, and a Fletcher-Powell estimation technique are used on the second cost function, to select a minimum velocity of the second cost function. The selected minimum velocity of the second cost function is taken as the vertical velocity of the vehicle.